

## ARLENE M. FIORE

GFDL, 201 Forrestal Rd.  
Princeton, NJ 08542-0308  
(609) 452-6525

arlene.fiore@noaa.gov  
<http://www.gfdl.noaa.gov/~aff>

### Education

Ph.D. in Earth and Planetary Sciences, Harvard University, June, 2003.

Thesis title: *Linking regional air pollution with global chemistry and climate: The role of background ozone*

A.B. in Environmental Geoscience, *magna cum laude*, Harvard College, June 1997.

### Grants and Honors

Invited ACCESS (Atmospheric Chemistry Colloquium for Emerging Senior Scientists) participant, September 2003.

National Science Foundation Fellowship, July 1998-July 2002.

Bok Center Distinction in Teaching Awards, Fall 1998, Fall 1999, Spring 2002.

Ecole Normale Supérieure Fellowship, Paris, France, Sept. 1997-June 1998.

*Summa cum laude* honors thesis, Harvard College, June 1997.

Dean's Research Award Grant, Harvard College, Summer 1996.

### Professional Experience

**Research Physical Scientist**, Geophysical Fluid Dynamics Laboratory, Princeton, NJ, 2004-present.

**Contributing Author**, U.S. EPA Air Quality Criteria Document for Ozone and Related Photochemical Oxidants, 2003-present.

**Research Associate**, Atmospheric and Oceanic Sciences Program, Princeton University, Princeton, NJ, 2003-2004.

**Graduate Researcher**, Harvard Atmospheric Chemistry Modeling Group, Harvard University, Cambridge, MA, 1998-2003.

**Co-convenor of special session**, American Geophysical Union Spring Meeting, Washington, D.C., May, 2002.

**Participant in American Meteorological Society Summer Policy Colloquium**, Washington, D.C., June, 2001.

**Independent Consultant**, to the Clean Air Task Force, Cambridge, MA, October, 1999, February, 2000.

**Undergraduate Researcher**, with Daniel J. Jacob, Harvard University, Cambridge, MA, 1995-1997.

**Reviewer**, *J. Geophys. Res.-Atmospheres*, *Geophys. Res. Lett.*, *Atmos. Environ.*, *JAWMA*, NSF, EPA, NASA

### Publications

- **Fiore, A.M.**, L.W. Horowitz, D.W. Purves, H. Levy II, M.J. Evans, Y. Wang, Q. Li, and R.M. Yantosca, Evaluating the contribution of changes in isoprene emissions to surface ozone trends over the eastern United States, in press, *J. Geophys. Res.*, 2005.
- West, J.J., and **A.M. Fiore**, Management of tropospheric ozone by reducing methane emissions, in press, *Environ. Sci. & Technol.*, 2005.
- Martin, R.V., **A.M. Fiore**, A.V. Donkelaar, Space-based diagnosis of surface ozone sensitivity to anthropogenic emissions, *Geophys. Res. Lett.*, **31**, L06120, doi:10.1029/2004GL019416, 2004.
- Liu, H., D.J. Jacob, J.E. Dibb, **A.M. Fiore**, R.M. Yantosca, Constraints on the sources of tropospheric ozone from <sup>210</sup>Pb-<sup>7</sup>Be-O<sub>3</sub> Correlations, *J. Geophys. Res.*, **109**, D07306, doi:10.1029/2003JD003988, 2004.
- **Fiore, A.M.**, T. Holloway, M.G. Hastings, A Global Perspective on Air Quality: Intercontinental Transport and Linkages with Climate, *EM*, December, 2003.
- **Fiore, A.M.**, D.J. Jacob, H. Liu, R.M. Yantosca, T.D. Fairlie, Q. Li, Variability in surface ozone background over the United States: Implications for air quality policy, *J. Geophys. Res.*, **108**, doi:10.1029/2003JD003855, 2003.
- **Fiore, A.M.**, D.J. Jacob, R. Mathur, R.V. Martin, Application of empirical orthogonal functions to evaluate ozone simulations for the eastern United States with regional and global models, *J. Geophys. Res.*, **108**, 4431, doi:10.1029/2002JD003151, 2003.
- Holloway, T., **A.M. Fiore**, M.G. Hastings, Intercontinental Transport of Air Pollution: Will emerging science lead to a new hemispheric treaty?, *Environ. Sci. & Technol.*, **37**, 4535-4542, 2003.
- Heald, C.L., D.J. Jacob, **A.M. Fiore**, and 17 others, Asian outflow and transpacific transport of carbon monoxide and ozone pollution: An integrated satellite, aircraft and model perspective, *J. Geophys. Res.*, **108**, 4804, 2003.
- Palmer, P.I. D.J. Jacob, **A.M. Fiore**, R.V. Martin, K. Chance, and T. Kuruso, Mapping isoprene emissions over North America using formaldehyde column observations from space, *J. Geophys. Res.*, **108**, 4180, 2003.
- **Fiore, A.M.**, D.J. Jacob, B.D. Field, D.G. Streets, S.D. Fernandes, and C. Jang, Linking ozone pollution with climate change: The case for controlling methane, *Geophys. Res. Lett.*, **29**, 1919, doi:10.1029/2002GL015601, 2002.
- **Fiore, A.M.**, D.J. Jacob, I. Bey, R.M. Yantosca, B.D. Field, A.C. Fusco, and J.G. Wilkinson, Background ozone over the United States in Summer: Origin, trend, and contribution to pollution episodes, *J. Geophys. Res.*, **107** (D15), doi:10.1029/2001JD000982, 2002.
- Li, Q., D.J. Jacob, I. Bey,...**A.M. Fiore**..., Transatlantic transport of pollution and its effects on surface ozone in Europe and North America, *J. Geophys. Res.*, **107**, 4166, 10.1029/2001JD001422, 2002.

- Martin, R.V., K. Chance, D.J. Jacob, ...**A.M. Fiore**..., An improved retrieval of tropospheric nitrogen dioxide from GOME, *J. Geophys. Res.*, (D20), 4437, doi:10.1029/2001JD001027, 2002.
- Martin, R.V., D.J. Jacob, J.A. Logan, ...**A.M. Fiore**..., Interpretation of TOMS observations of tropical tropospheric ozone with a global model and in-situ observations, *J. Geophys. Res.*, doi:10.1029/2001JD001480, 2002.
- Lin, C.-Y. C, D.J. Jacob and **A.M. Fiore**, Trends in exceedances of the ozone air quality standard in the continental United States, 1980-1998, *Atmos. Environ.*, 35, 3217-3228, 2001.
- Li, Q., D.J. Jacob, J.A. Logan, I. Bey, ...**A.M. Fiore**..., A tropospheric ozone maximum over the Middle East, *Geophys. Res. Lett.*, 28, 3235-3238, 2001.
- Bey I., D.J. Jacob, R.M. Yantosca, ...**A.M. Fiore**..., Global modeling of tropospheric chemistry with assimilated meteorology: Model description and evaluation, *J. Geophys. Res.*, 106, 23,073-23,096, 2001.
- Palmer, P. I., D. J. Jacob, K.Chance, ...**A. Fiore**..., Air mass factor formulation for spectroscopic measurements from satellites: application to formaldehyde retrievals from GOME, *J. Geophys. Res.*, 106, 14,539-14,550, 2001.
- Lin, C.-Y. C, D.J. Jacob, J.W. Munger, and **A.M. Fiore**, Increasing background ozone in surface air over the United States, *Geophys. Res. Lett.*, 27, 3465-3468, 2000.
- **Fiore, A.M.**, D.J. Jacob, J.A. Logan, J.H. Yin, Long-term trends in ground level ozone over the contiguous United States, 1980-1995, *J. Geophys. Res.*, 103, 1471-1480, 1998.
- Liang, J., L.W. Horowitz, D.J. Jacob, ...**A.M. Fiore**..., Seasonal variations of reactive nitrogen species and ozone over the United States, and export fluxes to the global atmosphere, *J. Geophys. Res.*, 103, 13,435-13,450, 1998.

### Invited Talks

- *Background Ozone in Surface Air: Origin, Variability, and Policy Implications*, Goddard Insititute for Space Studies, New York City, NY, May 2005.
- *Estimating background ozone in surface air over the United States with global 3-D models of tropospheric chemistry: Description, Evaluation, and Results*, to the U.S. EPA Clean Air Science Advisory Committee Ozone Review Panel, Research Triangle Park, NC, May 2005.
- *Background Ozone in Surface Air over the United States: Variability, Climate Linkages, and Policy Implications*, Department of Environmental Sciences, Rutgers University, New Brunswick, NJ, Mar. 2004.
- *Recent Changes in Eastern U.S. Forests: Implications for Air Quality*, Center for Sustainability and the Global Environment, University of Wisconsin-Madison, Madison, WI, Dec. 2004.
- *Background Ozone in Surface Air over the United States: Variability, Climate Linkages, and Policy Implications*, Department of Atmospheric and Oceanic Sciences, University of Wisconsin-Madison, Madison, WI, Dec. 2004.
- *Evaluating the impact of recent changes in isoprene and anthropogenic emissions on surface ozone over the eastern United States*, National Center for Atmospheric Research, Boulder, CO, Oct. 2004.
- *Uncertainties in isoprene-NO<sub>x</sub>-O<sub>3</sub> chemistry: Implications for surface ozone over the eastern United States*, Telluride Atmospheric Chemistry Workshop, Telluride, CO, Aug. 2004.
- *Background ozone and particulate matter (PM) in the United States: Implications for public policy*, briefing with Daniel J. Jacob to U.S. Senate Environment and Public Works Committee Staff, Washington, D.C., Mar. 2004.
- *Variability in surface ozone background over the United States*, EPA Peer Consultation Workshop on the Air Quality Criteria Document for Ozone and Related Photochemical Oxidants, Research Triangle Park, NC, Oct. 2003.
- *Variability in surface ozone background over the United States: Implications for air quality policy*, Atmospheric Chemistry Colloquium for Emerging Senior Scientists, Yellowstone National Park, WY, Sept. 2003.
- *The Double Dividend of Methane Control*, XIVth Global Warming International Conference and Exposition, Cambridge, MA, May 2003.
- *Background Ozone in Surface Air Over the United States*, U.S. EPA Meeting on Developing Criteria for the Chemistry and Physics of Atmospheric Ozone, Adelphi, MD, Mar. 2003.
- *The Double Dividend of Methane Control*, Workshop of UNECE Task Force on Integrated Assessment Modelling on Linkages and Synergies of Regional and Global Emission Control, IIASA, Laxenburg, Austria, Jan. 2003.
- *Linking ozone pollution with climate change: The case for controlling methane*, U.S. EPA/EMEP Workshop on Hemispheric Pollution, Bad Breisig, Germany, Oct. 2002.
- *Background ozone over the United States in Summer: Origin, trend, and contribution to pollution episodes*, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland, Feb. 2002.
- *Trends in ground level ozone over the continental United States, 1980-1995*, Northeast States for Coordinated Air Use Management meeting, New York City, NY, Sept. 1998.

### **Conference Presentations**

- *Recent and Future Changes in BVOC vs. Anthropogenic Emissions over the Eastern United States: Impact on Surface Ozone*, Gordon Research Conference on Biogenic Hydrocarbons and the Atmosphere, Barga, Italy, May 2004.
- *Variability in surface ozone background over the United States: Implications for air quality policy*, Atmospheric Chemistry Gordon Research Conference, Big Sky, MT, September 2003.
- *Linking Air Quality and Climate Change Mitigation Objectives: The Case for Controlling Methane*, *Eos. Trans. AGU* 83 (19), Spring Meet. Suppl., Abstract A21C-10, 2002.
- *The Origins of Background Ozone in Surface Air over the United States*, *Eos. Trans. AGU*, 81 (48), Fall Meet. Suppl., Abstract A22E-02, 2000.

### **Teaching Experience**

- Teaching Fellow, *An Introduction to Environmental Science: The Solid Earth*, Spring 2001, 2002.
- Participant, Graduate Science Teaching Seminar, Derek Bok Center, Spring 2002.
- Teaching Fellow, *Natural and Environmental Disasters*, Harvard University, Fall 1999.
- Participant in Graduate Writing Fellows Program, Derek Bok Center, Harvard University, Fall 1999.
- Teaching Fellow, *An Introduction to Atmospheric Chemistry*, Harvard University, Fall 1998.